

I Claim:

1. A process for manufacturing a cross-linked, expanded elastomeric safety support having a cellular structure comprising closed cells, said support being capable of being mounted on a wheel rim within a tire, said process comprising

kneading by thermomechanical working a rubber composition comprising a diene elastomer having a molar ratio of diene units of less than 15%, water in an amount of from 3 to 6 phr, a blowing agent that provides for formation of the cellular structure and a vulcanization system,

forming the rubber composition after thermomechanical working into a cross-linkable expandable support blank of predetermined section,

curing the blank in a mold followed by demolding the cured blank, and

expanding by decomposing the blowing agent and vulcanizing the cured blank so as to obtain a cross-linked expanded support.

2. A process for manufacturing a cross-linked expanded elastomeric safety support having a cellular structure comprising closed cells, said support being capable of being mounted on a wheel rim within a tire, said process comprising

kneading by thermomechanical working a rubber composition comprising a diene elastomer having a molar ratio of diene units of less than 15%, water in an amount of from 3 to 6 phr, a reinforcing filler comprising silica in an amount of from 10 to 30 phr

and carbon black, a blowing agent that provides for formation of the cellular structure and a vulcanization system,

forming the rubber composition after thermomechanical working into a cross-linkable expandable support blank of predetermined section,

curing the blank in a mold followed by demolding the cured blank, and

expanding by decomposing the blowing agent and vulcanizing the cured blank so as to obtain a cross-linked expanded support.

3. The process of Claim 1 or 2 wherein the diene elastomer is a copolymer of isobutylene and a co-monomer selected from between isoprene and p-methylstyrene.

4. The process of Claim 1 or 2 wherein the rubber composition initially comprises the blowing agent in an amount of from 15 to 30 phr.

5. The process of Claim 1 or 2 wherein the blowing agent is azobisformamide.

6. A process for manufacturing a cross-linked expanded elastomeric safety support having a cellular structure comprising closed cells, said support being capable of being mounted on a wheel rim within a tire, the process comprising

kneading by thermomechanical working a rubber composition comprising a copolymer of isobutylene and isoprene, water in an amount of from 3 to 6 phr, a reinforcing filler comprising silica in an amount of from 10 to 30 phr and carbon black in an amount of from 10 to 30 phr, azobisformamide in an amount of from 15 to 30 phr and a vulcanization system,

forming the rubber composition after thermomechanical working into a cross-linkable expandable support blank of predetermined section,
curing the blank in a mold followed by demolding the cured blank, and
expanding by decomposing the azobisformamide and vulcanizing the cured blank so as to obtain a cross-linked expanded support.

7. A cross-linkable, expandable blank for an elastomeric safety support having a cellular structure comprising closed cells, said support being capable of being mounted on a wheel rim within a tire, said blank comprising a diene elastomer having a molar ratio of diene units of less than 15% and water in an amount of from 3 to 6 phr.

8. A cross-linkable expandable blank for an elastomeric safety support having a cellular structure comprising closed cells, said support being capable of being mounted on a wheel rim within a tire, said blank comprising a diene elastomer having a molar ratio of diene units of less than 15%, water in an amount of about 3 to 6 phr and a reinforcing filler comprising silica in an amount of from 10 to 30 phr and carbon black.

9. The cross-linkable blank according to Claim 7 or 8 wherein the diene elastomer is a copolymer of isobutylene and a co-monomer selected from between isoprene and paramethylstyrene.

10. A cross-linked expanded elastomeric safety support having a cellular structure comprising closed cells obtained by the process of Claim 1 or 2, said support being capable of being mounted on a wheel rim within a tire, said support comprising a diene elastomer having a molar ratio of diene units of less than 15%, a reinforcing filler

comprising silica in an amount of from 10 to 30 phr and a blowing agent in an amount greater than 2 phr.

11. A cross-linked expanded elastomeric safety support having a cellular structure comprising closed cells obtained by the process of Claim 1 or 2, said support being capable of being mounted on a wheel rim within a tire, said support comprising a diene elastomer having a molar ratio of diene units of less than 15%, a reinforcing filler comprising silica in an amount of from 10 to 30 phr and azobisformamide in an amount greater than 2 phr.

12. The cross-linked safety support of Claim 10 wherein the support comprises the blowing agent in an amount greater than 5 phr.

13. The cross-linked safety support of Claim 11 wherein the support comprises azobisformamide in an amount greater than 5 phr.

14. The cross-linked support of Claim 10 wherein the diene elastomer is a copolymer of isobutylene and a co-monomer selected from between isoprene and paramethylstyrene.

15. The cross-linked support of Claim 11 wherein the diene elastomer is a copolymer of isobutylene and a co-monomer selected from between isoprene and paramethylstyrene.

16. A process for reducing internal heating during travel of an elastomeric safety support having a cellular structure comprising closed cells that is mounted on a wheel rim

within a tire to ensure tire function following a drop in pressure comprising mounting on the wheel rim a safety support manufactured by the process of any of Claims 1, 2 or 6.